BGP Session Culling

https://tools.ietf.org/html/draft-iops-grow-bgp-session-culling-02

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Abstract

This document outlines an approach to mitigate negative impact on networks resulting from maintenance activities. It includes guidance for both IP networks and Internet Exchange Points (IXPs). The approach is to ensure BGP-4 sessions affected by the maintenance are forcefully torn down before the actual maintenance activities commence.

“Voluntary” or “Involuntary”

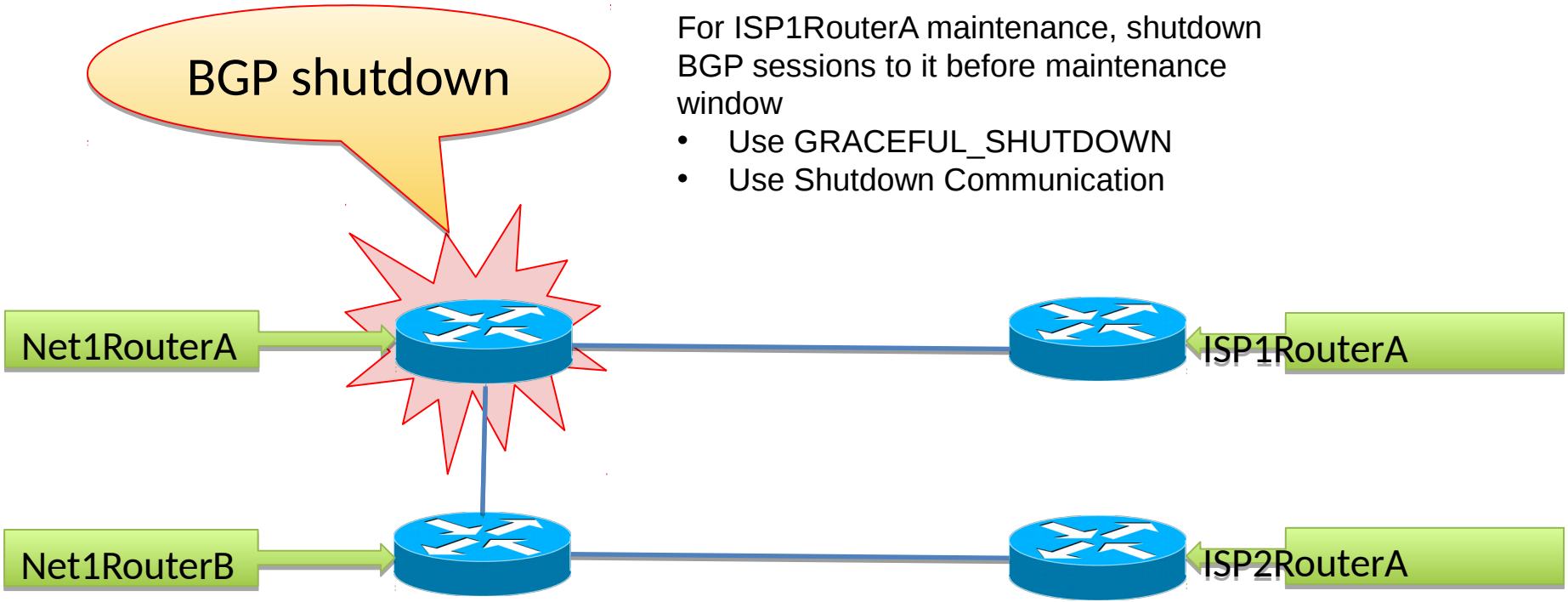
Voluntary: The BGP operator tears down potentially affected sessions, usually with an administrative shutdown.

Involuntary: The Caretaker of the lower level network disrupts BGP control-plane traffic, generally with an L4 ACL.

Suitable for cases where multilateral BGP is facilitated through a switched layer 2 fabric, notably IXPs.

Both result in a smooth drainage of traffic prior to losing data-plane and affecting end-user traffic.

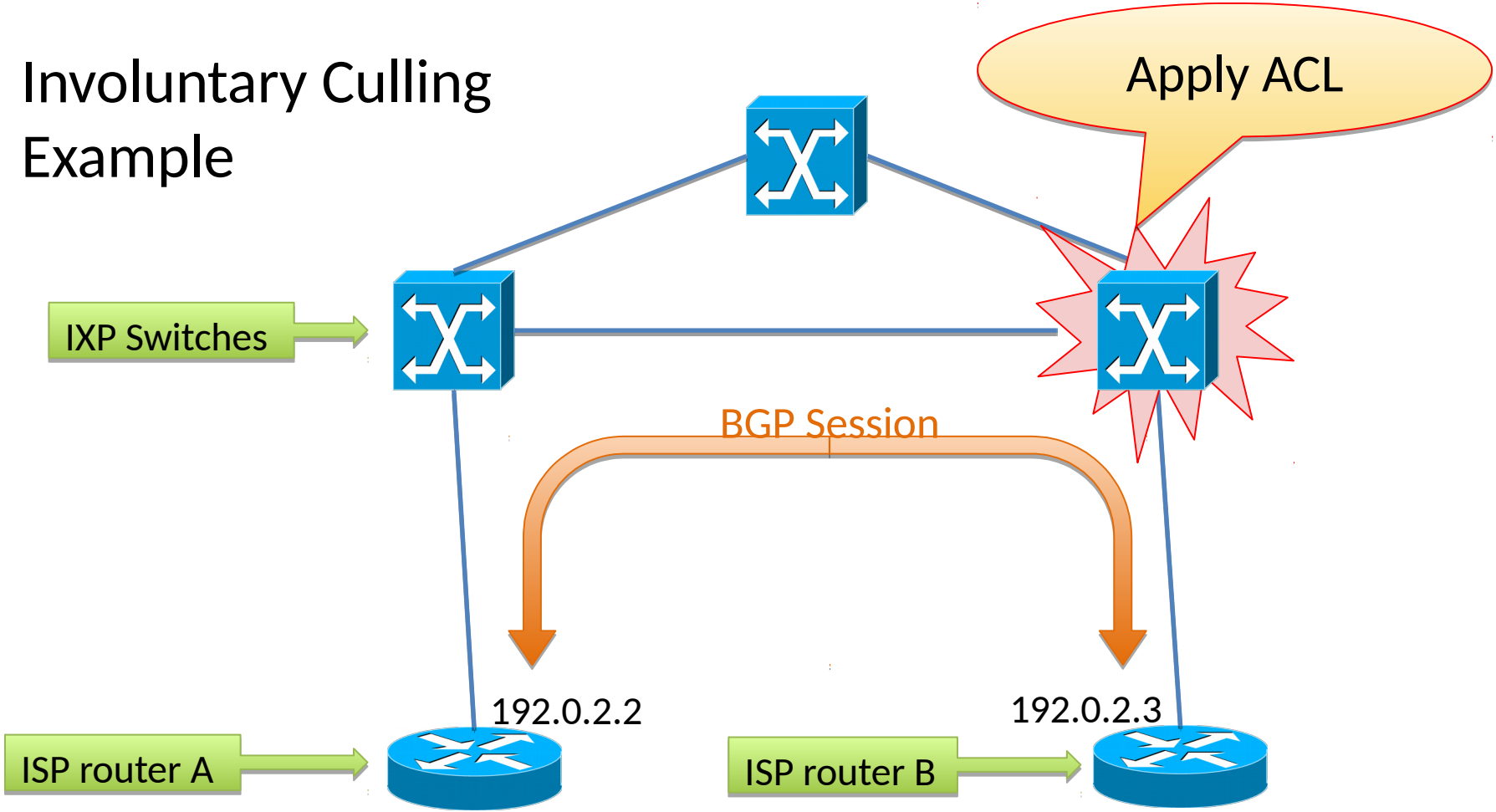
Voluntary Example



For ISP1RouterA maintenance, shutdown BGP sessions to it before maintenance window

- Use GRACEFUL_SHUTDOWN
- Use Shutdown Communication

Involuntary Culling Example



L4 Packet Filter

```
> show configuration firewall family ethernet-switching filter cull
  term cull-v4 {
      from {
          ip-version {
              ipv4 {
                  port bgp;
                  ip-source-address {
                      192.0.2.0/24;
                  }
                  ip-destination-address {
                      192.0.2.0/24;
                  }
                  ip-protocol tcp;
              }
          }
      }
      then discard;
  }
term cull-v6 {
```

Filter in both directions

IXP Subnet

Don't forget IPv6!

Steps since last IETF meeting

- Fixed up GRACEFUL_SHUTDOWN, which is now used as a reference
- Solicited feedback from IXPs
  (IXP Participants appear to like this)

Next?

We’d like to move forward to WG Last Call